

WHAT IS CLAIMED IS:

1. A drive apparatus for a wheelchair ramp having at least one movable ramp section, the apparatus comprising:
 - a linear actuator including a fixed end and a free end;
 - a gear rack coupled with the free end;
 - a complimentary gear for cooperating with the gear rack; and
 - a linkage coupled at one end with the gear and at an opposing end with a ramp section, the linkage pivoting for deploying and stowing the ramp.
2. The apparatus of claim 1 wherein the linear actuator comprises a hydraulic cylinder including a body and a rod movable into and out from the body.
3. The apparatus of claim 2 wherein the fixed end comprises the body and the free end comprises the rod.
4. The apparatus of claim 2 wherein the fixed end comprises the rod and the free end comprises the body.
5. The apparatus of claim 1 wherein the linear actuator comprises an electric actuator.
6. The apparatus of claim 1 wherein the gear rack comprises an elongate portion having a plurality of gear teeth for mating with the complimentary gear.
7. The apparatus of claim 6 wherein the gear rack is generally L-shaped and the elongate portion is generally parallel with and spaced away from the actuator.
8. The apparatus of claim 7 wherein the gear teeth are disposed on a bottom side of the elongate side.
9. The apparatus of claim 8 wherein the gear is disposed under the elongate side.

10. The apparatus of claim 1 further comprising a shaft, wherein the gear and a first end of the linkage are coupled to the shaft so that the linkage pivots about the shaft relative to the linear movement of the free end of the actuator.

11. The apparatus of claim 10 wherein the shaft is fixed such that the gear and linkage rotate in concert on the shaft.

12. The apparatus of claim 10 wherein the shaft is free to rotate in concert with the gear and linkage.

13. The apparatus of claim 1 wherein the linkage comprises a single rigid link.

14. The apparatus of claim 13 wherein the rigid link comprises a curvilinear shape.

15. The apparatus of claim 1 wherein the linkage comprises two or more rigid links coupled together.

16. A vehicle wheelchair ramp system comprising:
a linear actuator;
an enclosure recessed into a portion of a floor of the vehicle, the enclosure housing the entire actuator;
a ramp section pivotally coupled to the enclosure; and
a linkage coupling the actuator to the ramp section, the linkage converting a linear force from the actuator to a rotational force for stowing and deploying the ramp.

17. The system of claim 16 wherein the linear actuator comprises a cylinder in fluid communication with a power unit.

18. The system of claim 16 wherein the linear actuator comprises an electric actuator.

19. The system of claim 16 wherein the linkage comprises at least two rigid links.
20. A drive apparatus for a mobility access device, the apparatus comprising:
a linear actuator including a fixed end and a free end;
a gear rack coupled with the free end;
a complimentary gear for cooperating with the gear rack; and
a linkage coupled at one end with the gear and at an opposing end with a movable portion of the mobility access device, the linkage effecting reversible movement of the movable portion.
21. The apparatus of claim 20 wherein the linear actuator comprises a hydraulic cylinder including a body and a rod movable into and out from the body.
22. The apparatus of claim 20 wherein the fixed end comprises the body and the free end comprises the rod.
23. The apparatus of claim 20 wherein the fixed end comprises the rod and the free end comprises the body.
24. The apparatus of claim 20 wherein the linear actuator comprises an electric actuator.
25. The apparatus of claim 20 wherein the gear rack comprises an elongate portion having a plurality of gear teeth for mating with the complimentary gear.
26. The apparatus of claim 25 wherein the gear rack is generally L-shaped and the elongate portion is generally parallel with and spaced away from the actuator.
27. The apparatus of claim 26 wherein the gear teeth are disposed on a bottom side of the elongate side.

28. The apparatus of claim 27 wherein the gear is disposed under the elongate side.

29. The apparatus of claim 20 further comprising a shaft, wherein the gear and a first end of the linkage are coupled to the shaft so that the linkage pivots about the shaft relative to the linear movement of the free end of the actuator.

30. The apparatus of claim 29 wherein the shaft is fixed such that the gear and linkage rotate in concert on the shaft.

31. The apparatus of claim 29 wherein the shaft is free to rotate in concert with the gear and linkage.

32. The apparatus of claim 20 wherein the linkage comprises a single rigid link.

33. The apparatus of claim 32 wherein the rigid link comprises a curvilinear shape.

34. The apparatus of claim 20 wherein the linkage comprises two or more rigid links coupled together.